

**Listing of Claims**

1. (Canceled).
2. (Canceled).
3. (Canceled).
4. (Canceled).
5. (Canceled).
6. (Canceled).
7. (Canceled).
8. (Canceled).
9. (Withdrawn) A pharmaceutical composition suitable for use in a human comprising a biologically effective amount of an SCA-2 polypeptide and an acceptable carrier.
10. (Withdrawn) The composition of claim 9, wherein the SCA-2 polypeptide sequence is substantially similar to SEQ ID NO: 2.
11. (Currently Amended) A method of treating obesity comprising [the administration of] administering to a human a pharmaceutical composition comprising a biologically effective amount of an isolated human SCA-2 (spinocerebellar ataxia 2) polynucleotide and an acceptable carrier.

12. (Previously presented) The method of claim 11, wherein the obesity comprises stress-induced obesity.

13. (Withdrawn) A method of treating obesity comprising the administration of a pharmaceutical composition comprising a biologically effective amount of an SCA-2 polypeptide and an acceptable carrier.

14. (Withdrawn) The method of claim 13, wherein the obesity comprises stress-induced obesity.

15. (Withdrawn) A method of treating the abnormal accumulation of body fat comprising the administration of a pharmaceutical composition comprising a biologically effective amount of a polynucleotide coding for the antisense sequence to SEQ. ID. No. 1, and an acceptable carrier.

16. (Canceled).

17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (Currently Amended) A method for introducing an SCA-2 therapeutic into a human for the treatment of obesity, comprising transducing [the] a cell of said human with [the] a vector of claim 19 comprising an expression cassette encoding a human SCA-2 therapeutic.

21. (Currently Amended) The method of claim 20, wherein the ~~transduction~~ transducing occurs in vivo.
22. (Currently Amended) The method of claim 20, wherein the ~~transduction~~ transducing occurs ex vivo.
23. (Original) The method of claim 20, wherein the cell is selected from the group consisting of muscle cells and adipocytes.
24. (Currently Amended) The [cell] method of claim 21, wherein the cell comprises a neural cell.
25. (Currently Amended) A method for introducing an SCA-2 therapeutic into a human for the treatment of obesity, comprising transfecting a cell of said human with a plasmid comprising an expression cassette encoding the SCA-2 therapeutic.
26. (Previously presented) The method of claim 25, wherein the SCA-2 therapeutic is selected from the group consisting of an SCA-2 polynucleotide, an SCA-2 protein and an SCA-2 protein fragment.
27. (Previously presented) The method of claim 25, wherein said transfection is carried out by a procedure selected from the group consisting of calcium phosphate transfection, DEAE-dextran mediated transfection, transvection, microinjection, cationic lipid-mediated transfection, electroporation, scrape loading, ballistic introduction or infection, use of a gene gun, liposome and lipofectamine transfection.

28. (Previously presented) The method of claim 27, wherein the transfection occurs in vivo.

29. (Previously presented) The method of claim 27, wherein the transfection occurs in vitro.

30. (Previously presented) The method of claim 27, wherein the cell is selected from the group consisting of muscle, neural and adipose cells.

31. (Previously presented) The method of claim 30, wherein the transfection takes place as part of an ex vivo procedure.